<u>Amendments to the Drawings:</u>

Please add the attached new sheet of drawing for Figure 1. No new matter has been added.

Attachment: New Sheet

REMARKS

Claims 1 and 10-19 are pending in the present application, claims 10-19 having been added and claims 2-9 having been cancelled herein. The Office Action and cited references have been considered. Favorable reconsideration is respectfully requested.

Objections

The drawings were objected to because the subject matter of this invention admits of illustration by drawing to facilitate understanding of the invention. A new drawing is attached. Withdrawal of this objection is respectfully requested.

Claim 1 was objected to because "memory allocation units" are later referred as "allocation units". To answer this objection, the word "memory" has been added in every place that "allocation units" are recited.

Claim 1 was also objected to because the phrase "the applications" had no antecedent basis. To answer this objection, the words "the application" have been replaced by the word "possessors". This is supported by the specification, e.g., at page 2 line 21. Withdrawal of these objections is respectfully requested.

Claim rejections — 35 USC §112

Claims 1-9 were rejected under 35 U.S.C. §112 as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Claim 1 as amended is believed to be free of any of the indefiniteness objections contained in the Office Action. In particular, the features 1) "which may typically be a page with a fixed size or a block with a variable size", and, 2) "which may typically be an application

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of the user of the operating system of the computer system or the operating system itself", have

been deleted from claim 1. These features have been moved to new claims 10 and 11,

respectively, from which the word "typically" has been deleted. Form the same reason, claim 2,

as claim 1, is believed to be free of any of the indefiniteness objections contained in the Office

Action. Withdrawal thereof is respectfully requested.

Claim rejections — 35 USC §102

Claims 1-3, 5, and 7-9 were rejected under 35 U.S.C. §102(b) as being anticipated

by Flenley (U.S. Patent No. 6,063,765). Claims 4 was rejected under 35 U.S.C. §103(a) as being

unpatentable over Flenley in view of New, Jr. et al (U.S. Patent No. 7,353,281). Claims 7 was

rejected under 35 U.S.C. §103(a) as being unpatentable over Flenley in view of Malcom (U.S.

Patent No. 7,333,956). These rejections are respectfully traversed for the following reasons.

Claim 1 recites a method for securing by software confinement, a computer

system which executes codes which manipulate data, involving at least one memory manager

managing memory allocation units, and at least possessors and requesters of memory allocation

units. The method comprises performing an allocation of memory performed by the memory

manager upon request from another component of the operating system which transmits to the

memory manager, the identity of the requester, performing a check by the aforesaid memory

manager of the whole of the memory allocation units, each being associated with a possessor of

the memory allocation unit, performing an encryption of the data of each possessor by means of

a key associated with this possessor, performing a check by the memory manager, for each

request to access a memory allocation unit, of the identity of the requester, if this identity is not

identical to that of the possessor of the memory allocation unit, then access to the memory

allocation unit is refused by the memory manager, performing, by means of the memory

manager, encryption (in the case of a write request) or decryption (in the case of a read request)

of the relevant data with the key associated with the possessor, this key being at least

recalculated by the memory manager. This is not taught, disclosed or made obvious by the prior

art of record.

As per claim 1, the memory controller component disclosed by Flenley does not

manage memory allocation units but single variables. In contrast, the memory allocation units of

the subject Patent Application (hereinafter Hameau), may contain an arbitrary number of

variables.

More importantly, Flenley does not check the identity of the requester and does not

create encryption keys for each possessor. These two features are tied together: Flenley does

trust applications (which, if they need to have their variables encrypted, have to provide their

own encryption and decryption keys) whereas the memory manager disclosed by Hameau does

not trust applications and is designed precisely to avoid any trust assumption on and between

applications. This is reflected in claim 1. Therefore, Flenley does not disclose claim 1.

Moreover, none of the parameters of the methods exposed by Flenley (see, *e.g.*,

col.3, lines 3-12) provide any information about the identity of the requester. The checks

mentioned in Flenley (at col. 3, lines 47-55) do not concern the identity of the requesters but the

fact that the memory has already been allocated or not. The encryption described in Flenley (at

col. 4, lines 36-39) is based on the key information passed as a parameter of the SetVariableEnc

method by the requester and not calculated by the Flenley MCC. Similarly, the Flenley MCC

does not check the identity of the requester before each access to a memory location as disclosed

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Atty. Dkt. HAMEAU1

by Hameau. The verification described in Flenley (col. 4, lines 62-65) is a verification performed by the application itself (in this particular case a bank web page in inter-site electronic commerce); in addition, it is a verification of the user's identity (the user interacting with the application) and not a verification of the identity of the application.

The space mentioned in Flenley (col. 3, lines 39-40) is the space allocated for the whole heap (memory shared by the applications) and not "allocation units" in the sense of Hameau which are associated to a single possessor.

Flenley (col. 3, lines 57-61) defines the functionality of the SetVariable method which does not suggest any memory area to check the integrity of an allocation unit.

For at least these reasons, Applicant respectfully submits that claim 1 is patentable over the prior art of record. New claims 10-19, being dependant from claim 1, are not, a fortiori, disclosed by Flenley.

Claim rejections — 35 USC §103

As per claim 14, neither Flenley nor New do consider keys associated with applications ("possessors" in Hameau). Both deal with users' identification or authentication, rather than applications' identification. Therefore they consider keys and information associated with users rather than applications. For at least this reason, Applicant respectfully submits that claim 4 is patentable in and of itself. Additionally, claim 14 must be read in view of claim 1, and is therefore patentable for the reasons discussed above with respect to claim 1.

For at least these reasons, Applicant respectfully submits that claims 1 and 10-19 are patentable over the prior art of record whether taken alone or in combination as proposed in the Office Action.

        In view of the above amendment and remarks, Applicant respectfully requests

reconsideration and withdrawal of the outstanding rejections of record. Applicant submits that

the application is in condition for allowance and early notice to the effect is most earnestly

solicited.

        If the Examiner has any questions, he is invited to contact the undersigned at 202-

628-5197.

                                Respectfully submitted,

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